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Annual Report on Numerical simulations of magnetic and superconducting order in twisted bilayer graphene

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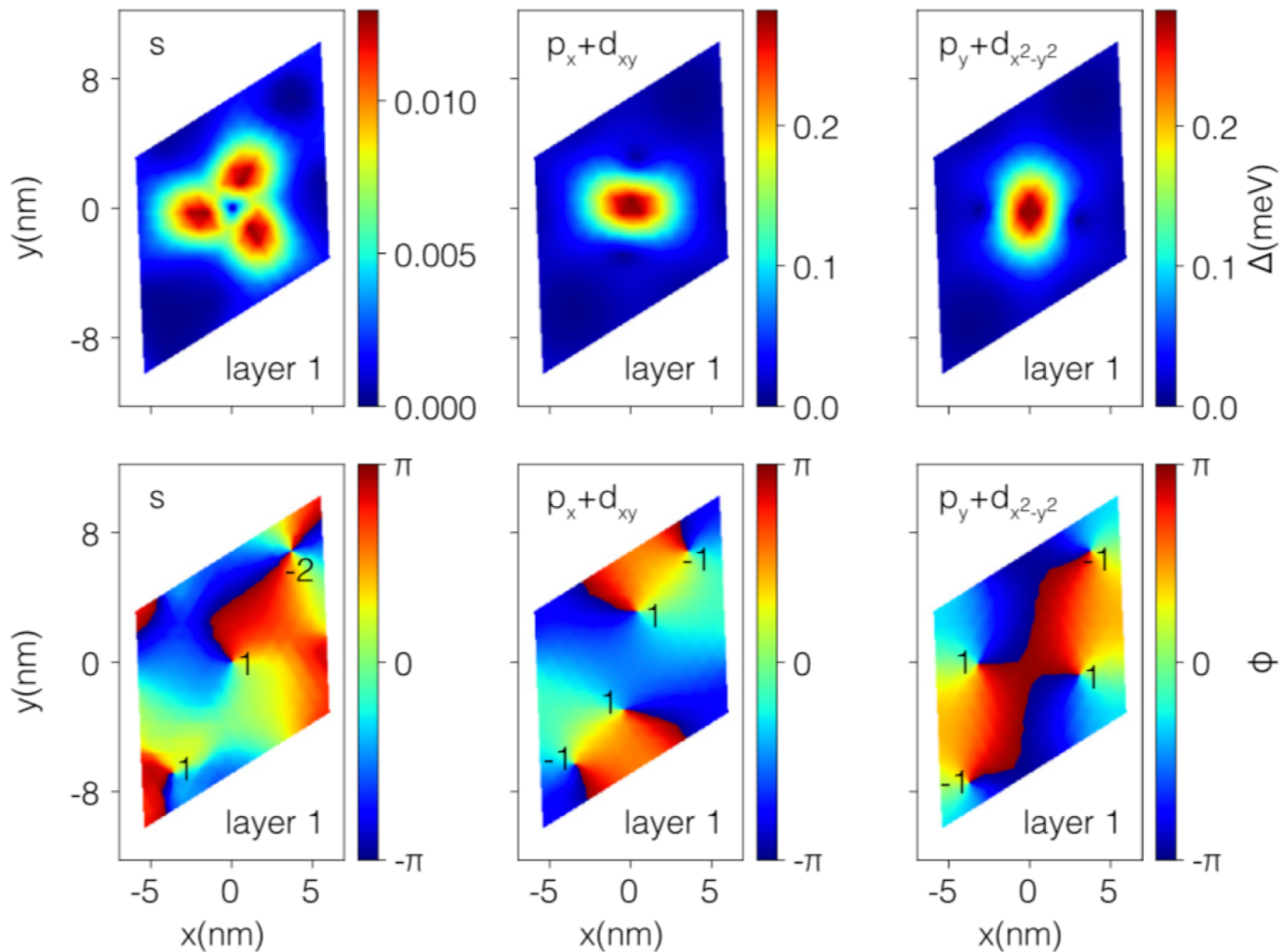


Fig. 1, Profiles of different superconducting order parameter components for the two graphene layers in a Moiré unit cell. The upper panels show the amplitude distribution and the lower panels show the phase distribution. The numbers in the lower panels denote the winding numbers of the vortices.

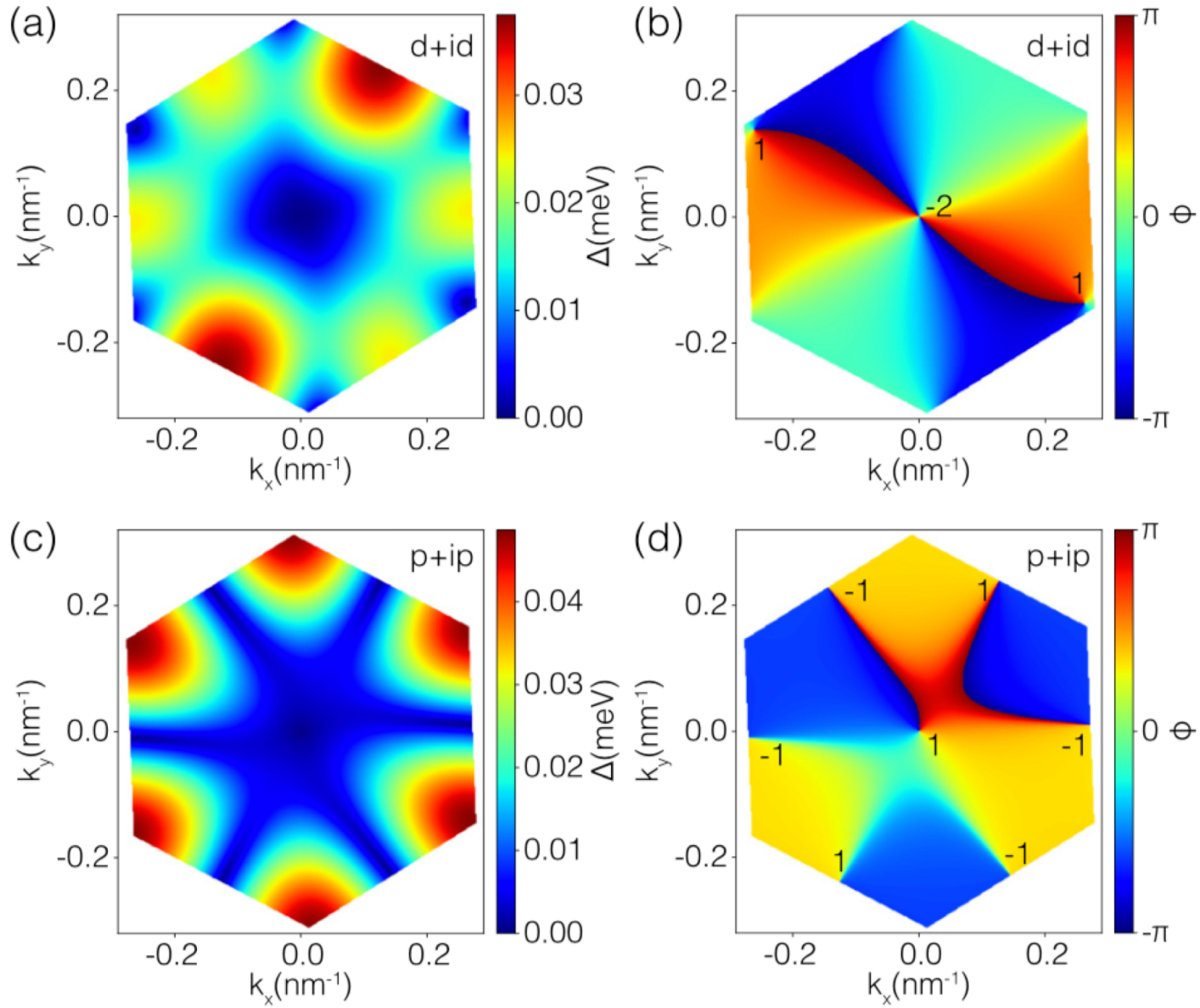


Fig. 2, Profile of the superconducting order parameter in the Moiré Brillouin Zone. (a), (b) Amplitude and phase of the even part of order parameter. (c), (d) Amplitude and phase of the odd part of order parameter. The numbers in (b) and (d) mark the winding numbers of the vortices.

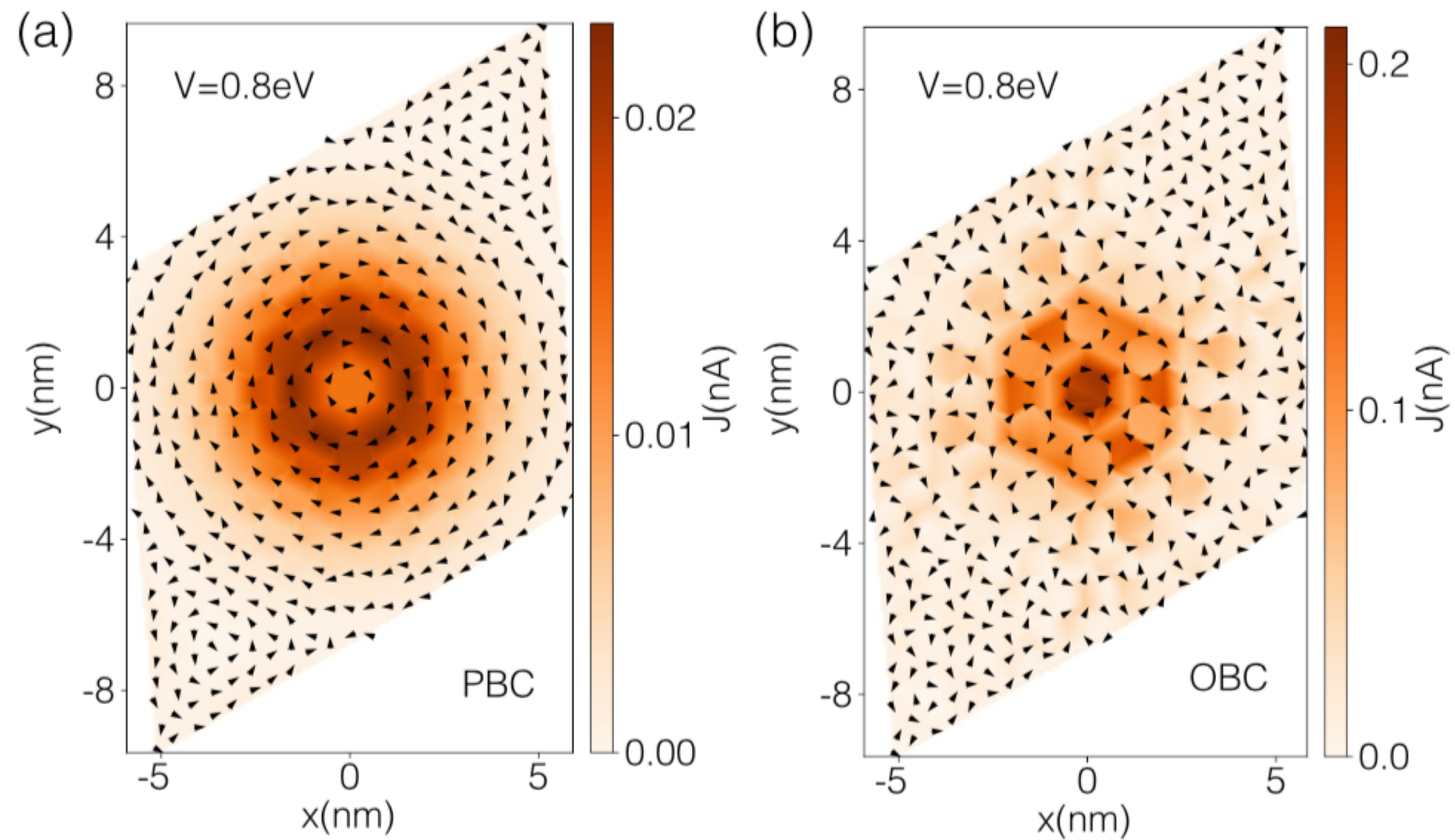


Fig. 3, Distribution of spontaneous supercurrent in a Moiré unit cell with the periodic boundary condition (a) and open boundary condition (b), respectively. The black arrows denote the direction of the supercurrent and the background color represents the magnitude of the supercurrent.